

Operating theatre nurses' perceptions of competence: A focus group study.

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ABSTRACT

Background. Competency Standards for operating theatre practice are used to guide clinical and professional behaviours. The need for competence assessment has been enshrined but the conceptualisation and agreement about what signifies competence in Operating Theatre has been lacking.

Aim. This paper reports a study exploring nurses' perceptions of the components of competence in the operating theatre.

Methods. Three focus groups were conducted with 27 operating theatre nurses in three major metropolitan hospitals in Queensland, Australia. Interviews were audio taped and field notes were taken. Data were collected during 2008. Thematic analysis was performed.

Findings. From the analysis of the textual data, three themes were identified: "coalescence of theoretical, practical, situational and aesthetic knowledge within a technocratic environment"; "the importance of highly developed communication skills among teams of divergent personalities and situations"; and, "managing and coordinating the flow of the list".

Conclusions. These findings have identified that competence in respect to components of knowledge, teamwork and communication, and the ability to coordinate and manage are important and should be incorporated in operating theatre Competency Standards. Additionally, findings may assist in the development of an instrument to measure operating nurses' perceived competence.

Keywords: competence, knowledge, teamwork, communication, leadership, workload, focus group, theatre nurses.

What is already known about this topic

- Generically, competence in nursing has been defined as knowledge, skills and attitudes needed to provide safe patient care.
- Competency Standards developed for specialties such as OT have articulated general behavioural guidelines; however, they do not capture all aspects of perioperative nurses' competence.

What this paper adds

- Adds to the current dimensions of competence that have previously been identified in the OT.
- Aesthetic and situational knowledge are identified as important indicators of nurses' competence in the OT.
- Competence in the operating theatre is inevitably linked to the ways in which team members communicate with each other, and consequently has the potential to impact negatively on patient outcomes.
- Coordinating and managing the workload is identified as an essential component of competence for nurses practicing at all levels in the OT, not just at a management level.

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Introduction

Competence has been described using divergent perspectives; from a reductionalist perspective that is based on a checklist of psychomotor behaviours through to a broader understanding of the elements that underpin competence in relation to knowledge, skills and attitudes (Benner 1984). Internationally, the nursing profession has embraced the use of competency statements that define behavioural guidelines (ICN 1987). Whilst these guidelines have informed the development of specialty competency statements; description and application of competencies in relation to the contextual nuances of specialties such as the Operating Theatre (OT) has thus far been limited. Specifically, development of competency statements that are reflective of the complexity and multidimensionality of the OT specialty remains a challenge. The aim of this study was to gain an in-depth understanding of what competence means to OT nurses using qualitative methods; an approach used previously to help uncover unique competencies associated with specialties (ACCCN 2002).

Background

Competence has been broadly defined as “*The combination of skills, knowledge, attitudes, values and abilities that underpin effective and/or superior performance in a profession / occupational area*” (ANMC, 2006, p. 8).

Internationally over the previous 25 years, there has been extensive development of competency statements describing the expected clinical skills and abilities of the beginner RN. In many instances, competency statements were deemed a minimum practice requirement for state and/or territory registration following graduation from

university nursing programs (Chariella et al. 2008, ICN 1987). The statements were designed to be generic, and therefore able to be applied across a range of practice settings. For example, in Australia, competency statements fall within five domains; professional practice, critical thinking and analysis, provision and coordination of care, and collaborative and therapeutic practice (ANMC 2006). However, such competency statements do not necessarily reflect all of the practice domains at an advanced level (Chariella et al. 2008), nor do they specify additional knowledge, skills and attitudes required to practice in specialites such as perioperative nursing. This has been problematic, both in Australia and internationally as generic competencies were not nuanced to reflect the emergence of new knowledge, technological advances, or meeting changing public needs and demands (ICN 1987). This has driven the subsequent development of specialist competency statements.

The International Council of Nurses defines specialisation as: “... *a level of knowledge and skill in a particular aspect of nursing which is greater than that acquired during the course of basic nursing education*” (ICN 1987). Specialist competency statements have been developed for perioperative practice in North America, the United Kingdom, and Australia (AORN 2008, ACORN 2008, APP 2007). The impetus for the development of specialist competencies was driven by the need to reflect contemporaneous perioperative practice. Throughout the aforementioned countries, similar domains reflecting technical and surgical knowledge, infection and environmental control, interpersonal communication, and ethico-legal aspects of practice, have been identified. Whilst current specialist competency development appears to be germane to perioperative practice internationally, there is a need to extend the current domains of competence as they apply in this context. Identifying and exploring other domains of competence used in

perioperative practice will add to the current perioperative competency statements, and is crucial if these are to inform the next step in advancing the specialty's move towards a credentialing model.

The study

Aim

The aim of this study was to better understand nurse competence as it applied to nursing practice in the OT.

Design

This study employed a qualitative research design, using focus groups (Klueger 1994). With focus groups, self disclosure is emphasised in order to assist participants as a collective to explore and clarify perspectives on a subject with which they are familiar, that may not be possible using other approaches.

Participants

The participants were purposively selected to obtain a wide cross-section of OT nurses working across anaesthetics, surgery and recovery room areas in three large metropolitan hospitals in Queensland, Australia. In order to be inclusive of the different nursing categories within the OT, the first and third focus groups were conducted with staff nurses, and the second, with senior nurses who worked either as clinical nurse consultants (CNCs) or educators. Having homogenous groups increased the likelihood that participants would contribute more freely in discussion as status differentials were minimised (Krueger 1994).

Data collection

Demographic data were collected and included age, years of OT experience, primary role (instrument, circulation, anaesthetics or recovery room), and nursing category (i.e., clinical nurse or manager/educator). Qualitative data were collected using focus group interviews, which were audiotaped. Three focus groups, one at each of the hospital sites, were conducted. The number of participants in each group ranged from 4 to 15. The interview was guided by a set of non-directive questions, developed *a priori* from the literature on competence. For instance, group participants were asked “What personal strengths are important to the operating room nurse?” and, “How would you describe the characteristics of a competent OT nurse?” Group interviews were moderated by the first author, and were conducted in a quiet location, and lasted approximately between one and two hours, until the topic had been covered to the participants’ satisfaction or until no new data were elicited (Klueger 1994). During the focus group interviews, field notes were taken by the research assistant.

Focus groups emphasised group interactions by encouraging participants to talk with each other, ask questions, and comment on experiences and personal perspectives (Klueger 1994). Participants hear the responses of others and have the opportunity to regulate their opinions or statements based on the variability of the discussion as the group progresses (Krueger 1997). The role of the moderator is pivotal to the discussion that is generated, and creates opportunities for spontaneous group interactions (Sim 1998). The first named author had previous experience as an OT nurse, and was cognisant that conveying the impression of expertise may intimidate some participants, so emphasised what she had learnt from participants. During group discussions the mild, unassuming direction of the first author allowed participants the opportunity to share dialogue among themselves, rather than with her.

Ethical considerations

Ethical approval for the study was given by ethics committees of the university and the three participating hospitals. All participants were given an invitational letter containing information regarding the study's aims, procedures, risks, and benefits. Participants were required to sign a consent form and complete a brief demographic profile.

Data analysis

Qualitative data analysis is an iterative process using a constant comparative method to inform the development of categories and themes (Strauss and Corbin 1990). The process of analysis involved open coding (Strauss and Corbin 1990), categorising (Patton 2002) and identifying themes (DeSantis and Ugarriza 2000). Thematic analysis of the transcripts and field notes was conducted to identify key concepts relative to competence, and each transcript was analysed in the same way. Two members of the research team listened to the audiotapes and checked the transcriptions for accuracy, and identified initial codes and categories. Regular discussions were held with the other members of the research team to further refine emerging categories and themes. Codes were developed based on the topics participants discussed, which were then categorised according to their similarities and differences. Categories were re-examined for consistencies that captured the essence of the experiences and behaviours across multiple situations reflecting abstracted themes (DeSantis and Ugarriza 2000). Analysis was inductive. For instance, the category of 'aesthetic knowledge' that emerged from our analysis was then re-

examined using seminal literature that incorporated this form of knowledge into “patterns of knowing” (Carper 1978, p.255).

Rigour

The techniques of credibility, auditability, fittingness are recommended to enhance rigour in qualitative research (Guba and Lincoln 1994; Tobin and Begley 2004). In this study, all members of the research team were involved in data analysis in order to identify irregularities and establish inter-rater consistency. Once complete, the preliminary findings were taken back to participants for clarification and confirmation as a means of member-checking to address credibility (Denzin and Lincoln 1994). An audit trail included the use of memos that linked codes with pieces of data and this supported the codes and emergent categories. Selection of participants was based on their knowledge of the phenomenon under study, and thus there may be fittingness of findings to other naturalistic settings on a conceptual level (Denzin and Lincoln 1994).

Findings

A total of 27 registered nurses participated across the three hospital sites and included a mix of full-time and part-time registered nurses who belonged to the same nursing categories. Participants’ ages ranged from 21 to 62 years; the average age was 38.6 years ($SD = 11.0$); and years of experience averaged 11.6 ($SD = 10.0$). Three themes emerged from the analysis of textual data. They were: “coalescence of theoretical, practical, situational and aesthetic knowledge within a technocratic environment”; “the importance of highly developed communication skills among teams of divergent personalities and situations”; and, “managing and coordinating the

flow of the list”. Details of the themes are described, with categories italicised. Table 1 summarises the themes and categories.

<Insert Table 1 here>

Coalescence of Theoretical, Practical, Situational and Aesthetic Knowledge within a Technocratic Environment

The theme, ‘coalescence of theoretical, practical, situational and aesthetic knowledge within a technocratic environment’ was couched in terms of the extensive knowledge needed to work in the OT, an environment underpinned by a technological omnipresence. Participants described different types of knowledge that OT nurses needed in order to be considered competent in their roles. The category, *technical and procedural knowledge* was described as the epitome of competence in relation to the development of the psychomotor skills needed to operate a vast and complex array of mechanised equipment. Many participants reported the need to keep up-to-date with the latest trends in surgical technologies and procedures as a means of maintaining their competence levels to meet the demands of these ever-increasing changes.

Participants discussed competence in relation to the necessity to maintain a high standard of clinical practices based on *knowledge of protocols and standards*. This type of knowledge was translated into an uncompromising compliance with standards that was considered essential in providing safe patient care. Knowledge of, and working within the scope of the college standards of practice was considered by participants in all focus groups as “a given”, and also epitomised competence at a “psychomotor” level. Participants stated that all clinical activities were governed and informed by particular protocols and procedures, and hence OT nurses needed the

requisite knowledge in regards to applying these across different clinical situations. However, there were instances where novice and lesser experienced OT nurses were seemingly unable to fully develop the core skills, and were perceived by some of the more senior OT nurses as ‘incompetent’. Consequently, this limited the types of procedures and cases in which they could actively participate.

For some novices, learning the particular protocols and procedures depended on the amount of clinical exposure they were able to gain in each sub-specialty. Participants across all groups recognized that knowledge was generated through clinical experience and exposure in the various sub-specialties. The category, *situational knowledge*, reflected nurses’ ability to anticipate the needs of specific situations which was often based on previous experiences in similar situations. Participants described the learning curve that was associated with moving in and out of different surgical specialities.

Group 1 discussion:

P4: As a new nurse it is difficult because you do one main area and then you do three other little areas so you never really feel truly comfortable. Or you finally feel comfortable and then it’s time for you to move on. You just get comfortable and then you move....It’s starting again each time and I still feel really new, I am not comfortable.

P3: Yes, it’s a steep learning curve.

Participants revealed how the ability to anticipate the needs of the surgical team and anaesthetist during surgery was underpinned by *situational knowledge*. For example, to be able to predict a difficult intubation based on the patient’s physical attributes (i.e., “a short fat neck”). The ability to anticipate and plan based on this knowledge meant that these types of procedures went more smoothly for all involved.

Aesthetic knowledge underscored nurses’ ability to share empathy with their patients, and was discussed against the dialectic of the caring versus the technical role

of nurses in the OT context. Participants made fundamental distinctions between their nursing role as “patient advocate” as opposed to that of the OT technician, whose primary role orientation was based exclusively on technical skills.

Group 3 discussion:

N14: We care for the patient, we are the patient’s advocate, they can’t, they are technicians; they are great with machines and equipment, whereas we are patient focused.

N21: We protect patients emotionally, we do the manual handling and safety, and there are so many multi faceted approaches in the ways that we care for them.

N22: We make sure it is safe for them to go home.

N24: We use a holistic approach.

N21: How this [surgery] is going to affect them postoperatively, instead of just doing the job.

N24: You are talking to a patient who is traumatized.

Whilst acknowledging the importance of their technical role, participants described their capacity to vicariously experience another’s feelings and experiences, and the ways in which this informed their ability to provide safe and appropriate nursing care that encompassed patients’ psychological, cultural and spiritual needs. *Aesthetic knowledge* was also underscored by nurses’ ability to traverse across multidisciplinary role boundaries in order to ensure that patient care needs were satisfied. Participants perceived that this aspect of competence also distinguished them from OT technicians, whose roles were well defined and task focused.

The Importance of Highly Developed Communication Skills among Teams of Divergent Personalities and Situations

The theme, ‘the importance highly developed communication skills among teams of divergent personalities and situations’ centred on the presence or absence of

communication, its quality, and whether it was effective in conveying vital information members needed to fulfil their roles. 'Divergent personalities and situations' characterised the notion of the variation in communication styles and foci used in multidisciplinary teams, which changed according to the needs of the person and the situation. The categories, *building communication skills in teams* and *team members are conduits of information* were discussed in terms of the ability of team members to demonstrate competence in their communications with other members of the multidisciplinary team. In fact, it was agreed that competence in communication was more fundamental and not just characterised by the ability to perform in a psychomotor capacity.

Group 2 discussion:

P11: There are different levels of competence, you have novice practitioners and they are taught at a certain level, so they will function in the basics and then increase and as your expectations change, you have the Level 1s who run the list and will have those communication skills...

P6: Would you not agree though that even with someone who was at a novice level, who was just doing the skills and not being able to communicate or look at what else needs to be done, you wouldn't see them as competent...

P10: Absolutely. You are not really competent until you get outside of that novice level...Novices are really not competent because they don't have that level of communication even though they have some basic [clinical] skills. They are deemed as competent when they actually pick up their communication.

OT nurses at all levels were expected to be able to decipher and convey complex clinical information effectively to other members of the multidisciplinary team.

Participants expressed concern for patient safety when team members did not do this effectively.

Competence in communication was considered in relation to the content of the information and the ways in which it was conveyed to others. Clearly, in some

instances, important information was not always conveyed, and this negatively impinged on team performance and cohesion.

Group 3 discussion:

P23: It is very frustrating, you go and get a tray and it has all changed and no one knows why, when, and how.

P14: Or things have moved around and you don't know where to find them. But the people who are [working] in that specialty know it has all happened, but they are not on that shift.

P24: Or they change the order of the operating list or something and don't tell anyone. The surgeons just decide to change the [operating list] order – it's no big deal, but it is a huge deal to the anaesthetic people who then have to set up for another patient. That then takes more time.

The category, *the enabling influence of collegial support* was couched in terms of the support given by team members which allowed novices to develop their clinical competence. Support was given to members in relation to sharing of information during a procedure or a list, and consequently provided opportunities for learning and developing the skills of lesser experienced OT nurses. Participants across all groups agreed that information sharing and showing respect made them feel “more capable of doing things and builds confidence.”

Managing and Coordinating the Flow of the List

The theme, ‘managing and coordinating the flow of the list’ encompassed the ability to organise and prioritise human and material resources at all levels, from the nurse managing the list in the room, to the team leader who was coordinating a suite of up to 20 theatres. The majority of participants believed that skills in management and coordination were essential features of an OT nurse’s level of competence.

Subsumed in this was the aptitude of the coordinator to manage conflicts between medical staff, as well as other nursing staff in the team. Some participants illustrated

the tensions between these roles and the resolve of senior nurses to delineate the role boundaries based on *coordinating and negotiating competing priorities*. Much of the conflict between medical staff was related to the sequencing of the emergency surgery list based on surgical and anaesthetic priority. In these instances, nurses who were coordinating an emergency list perceived the priority of surgeries was within the remit of the anaesthetist and surgeon concerned; however believed that they were nonetheless expected to broker agreements between the medical staff.

Group 2 discussion:

P7: How much negotiation do we do here?

P6: Eight hours a day.

P8: There are not enough hours in the day for it.

P6: As nurses we seem to sit in the middle of it all.

P8: We do a lot of negotiating.

P5: We make it happen.

P11: We consciously try to remove ourselves from a lot of those conversations. When a surgeon and an anaesthetist are arguing or negotiating over what gets done, we were traditionally in the centre of it and we have consciously taken ourselves out of that.

In deciding who should coordinate in a particular situation, the categories *using the bigger picture perspective*, and *leadership attributes* were recognised as critical to being considered competent, although there was overlap with *situational knowledge* as it was often the most experienced OT nurse who coordinated during ‘after-hours’ period.

Group 3 discussion:

P20: Who takes control?

P13: The coordinator and anaesthetist are the ultimate ones after hours who will decide what is done, the anaesthetist will triage the patients according to need, and so you have those two leaders there.

P20: I wouldn’t say every time it is necessarily the surgeon.

P15: No, it is the anaesthetist and it depends who has got the most experience like a scrub nurse would have way more experience than the Registrar then they are in control.

In order to be perceived as competent, the category *situational knowledge* was considered to be imperative for OT nurses who were invested with making clinical decisions based on priorities of care. Often, discussions with surgeons and/or anaesthetists centred on the availability of instrumentation and equipment, staffing, and skill mix. Therefore, experienced nurses were very much privy to, and had input into some of the decisions made in relation to prioritising patient care in the OT. Nurses who possessed *leadership attributes* and *situational knowledge* were perceived to share equal status with medical team members in the decision making process.

Discussion

In this study, three themes emerged as being central to competence in this environment: “coalescence of theoretical, practical, situational and aesthetic knowledge within a technocratic environment”; “the importance of highly developed communication skills among teams of divergent personalities and situations”; and, “managing and coordinating the flow of the list”.

The first theme has illustrated that nurses require detailed theoretical, practical, situational and aesthetic knowledge to be considered competent in the OT. Nursing knowledge has been considered in relation to balancing the ‘art and science’ of nursing care (Benner 1984, Carper 1978). Theoretical knowledge as described in this study shares synergies with earlier notions of ‘empirical knowledge’ (Carper 1978). ‘Empirical’ or scientific knowledge has been characterised relative to the generation of nursing knowledge about theories and general laws used to inform nursing care. In this study, content underpinning the theoretical knowledge of OT

nursing relates to policies and procedures, specialty standards, and anatomy and physiology. However, while there are aspects of theoretical knowledge that are common core concepts that span across all OT sub-specialties (e.g., infection control, anatomy and physiology); there are other aspects that may be particular to different sub-specialties, such as theoretical knowledge related to the orthopaedic specialty.

Study findings support previous work which has described the critical link between theoretical knowledge, technical skills, and competence (Gillespie et al. 2006, Riley and Manias 2006, Prowse and Lyne 2000). The current study has highlighted the explicit importance of situational knowledge as a function of the ability to anticipate the needs of the situation which consequently inform the nursing actions taken, and has not been emphasised in the literature. It appears that situational knowledge is linked to the degree of clinical exposure that OT nurses gain across the various sub-specialties. Nurses who have worked across a variety of areas will more likely be able to anticipate based on prior exposure to a similar situation. Plausibly such familiarity influences role performance, and therefore competence.

This study has extended the notion of aesthetic knowledge vis-à-vis nurses' capacity to vicariously experience another's feelings and demonstrate empathy (Carper 1978) within the OT context. The idea of aesthetic knowledge recognizes the role of empathy and the ability that nurses have to support patients as they endure the personal stress that occurs as a result of illness (Carper 1978). Patient care presents unique challenges in OT – nurses must work within narrow time constraints to provide reassurance as well as obtain important clinical and psychosocial information from the patient (Gillespie and Richardson-Tench in press). Further, patients are at their most vulnerable when they enter the OT, and are completely dependent on the skills and expertise of the nurses assigned to care for them (Bull and FitzGerald

2006). In order to promote therapeutic and safe care, OT nurses must be able to combine the technical and caring aspects of their role and act as human conduits to provide the physical link between the patient and the machine (Glaze 1999, Sandelowski 1999). Participants in this study identified the significance of their role as carers and whilst they acknowledged the value of technical competence, eschewed the 'technician' label. Study findings suggest that possessing aesthetic knowledge distinguishes nurses from technicians in the OT, a notion supported in previous research (Sigurdsson 2001, Bull and FitzGerald 2006). Arguably, shifting models of care manifest in the growing trend to replace nurses with theatre technicians has the potential to erode therapeutic care traditionally given by nurses.

In relation to the second theme, study findings have reinforced the imperative for nurses to capably communicate and work in teams as an essential component of competence in the OT. If OT nurses are unable to use effective communication skills with other team members, then others may not perceive them as being competent. An inability to construe non-verbal and subtle verbal cues reduces OT nurses' capacity to contribute meaningfully to team activities, a point that has been raised in previous research (Gillespie et al. 2008, Silen-Lipponen et al. 2005). Consequently, team cohesiveness and performance is negatively affected. There is compelling evidence to suggest that a lack of teamwork and communication failures can have disastrous consequences in the OT (Sexton et al. 2000, Reason 2005, AIHW 2007). Patient outcome is dependent on how well members convey information. In a retrospective review of adverse events in 28 Australian hospitals, communication was identified as the leading cause and was associated with twice as many deaths as clinical inadequacy (Wilson et al. 1995). Effective teamwork is a critical determinant in health service delivery and mitigates against errors and adverse events (Lingard et al. 2005).

Internationally, there is a recognition that better communication processes will contribute to better patient outcomes (Healey et al. 2006, Sexton et al. 2000). The current study has further highlighted the paramount need for members of the OT team to demonstrate competence in the ways that information is conveyed to others in the team. If information is not conveyed appropriately, and in a timely manner to all members, then this may lead to errors in patient care. Consequently, competence in communication and working together in a team is an essential component of being competent – and therefore providing safe patient care in the OT setting.

The third theme emphasised the role of OT nurses in terms of their ability to manage the workload at all levels. Whilst the role of the OT manager has been discussed elsewhere (Moss et al. 2002), coordinating the workload has not been described in relation to competence of the OT nurses who work on the floor. Skills in coordination are equally important as a function of competence for nurses who coordinate a theatre list. For instance, it may be necessary to revise the order of the theatre list based on the availability of equipment and instrumentation. Additionally, the nurse coordinating the room may need to ensure that the instrumentation is processed in readiness for the afternoon list when it may be required. Therefore, OT nurses must also gain a ‘bigger picture’ perspective in order to anticipate and plan according to clinical needs that extend beyond their list. Demonstrated competence in managing the workload at this level may well help to avoid patient delays and cancellations because of an unforeseen lack of availability of material resources required for the list. Therefore, OT nurses who are working in a list need to be able to coordinate, negotiate and prioritise according to emergent needs that unexpectedly arise. Arguably, possessing this type of competence may be considered another realm of safe practice.

Subsumed in the coordinating role is the ability to manage conflict between team members. In previous work, a main source of team conflict concerned the coordination and prioritisation of the operating list (Coe and Gould 2007, Riley and Manias 2006). In an environment where the only constant is change, conflicts often arise in relation to scheduling of patients, lists over-running, and availability of staff and equipment (Coe and Gould 2007, Riley and Manias 2006). Coordinating activities with other members of the multidisciplinary team who have different role foci necessitates that OT nurses develop skills in negotiation (Moss and Xiao 2004). In many instances, OT nurses are the conduits of communication, and foster the greatest rapport and cooperation between members of the multidisciplinary team. Indeed, the ability to resolve conflicts between members of the multidisciplinary team before they escalate is crucial if patients are to receive optimal care.

Limitations

This study had a number of limitations. The geographical location may have been a limitation as the nurses working in the OT departments of the three hospitals selected may have been in some way atypical. However, a variety of hospitals were used, thus ensuring a wide-cross section of participants. The fact that only three focus groups were conducted may have also been a limitation. Despite this, there was representation of various staff categories in each group. Using focus groups had some advantages. They allowed free, unencumbered discussion by reducing the possibility for potential power imbalances that may be constraints if individual interviews were conducted. Additionally, the focus groups were homogenous in that participants were from the same staff categories, therefore further reducing the potential for power imbalances among participants (Krueger 1994).

Implications for Further Research

Focus groups were useful in delineating and conceptually clarifying components of competence as it applies to nurses' practice in the OT. Through the themes and categories identified in this qualitative study, it would seem timely to review, and perhaps add to, the specialty competency standards that define nursing practice in the OT. This research indicates that there is scope for advancing the utility of current competency standards through further refinement and development. Thus the information gained through this study may be used to inform the inclusion of statements for the specialty's competency statements especially in consideration of credentialing OR nurses for advanced practice roles. Additionally, these findings may be useful in informing the development of a self-assessment measure that may be used to assess nurses' level of perceived competence in the OT.

CONCLUSION

This study has emphasised aspects of competence that may significantly impact on OT nurses' ability to provide competent and safe care in this pressurised context. Study findings have indicated that aesthetic knowledge is just as applicable in the OT setting as a function of competence as it is in other more traditional clinical settings. Conceivably, retaining a strong nursing presence in this context is important if patients are to receive safe and therapeutic care. The OT is a potentially high-risk environment that is vulnerable to multiple communication errors. The findings of this study have suggested that effective communication is perhaps more significant than being technically adept, as safe patient care relies on the accurate and timely exchange of information. Undoubtedly, nurses' level of competence vis-à-vis communication

has the potential to adversely influence team cohesion, and hence team performance. Further, it appears that competence is also characterised by OT nurses' ability to coordinate and manage at all levels, from coordination of the theatre list to a suite of theatres. For nurses to develop competence in the areas identified in this study, appropriate support strategies are needed at the departmental and organisational levels. Implementation of such strategies may well improve patient care and outcomes in this environment.

REFERENCES

- Australian College of Critical Care Nurses (2002) *Competency standards for specialist critical care nurses*, Melbourne.
- Australian College of Operating Room Nurses (2008) ACORN standards for perioperative nursing: including nursing roles, guidelines, and position statements. Australian College of Operating Room Nurses, Adelaide.
- Australian Institute of Health & Welfare (2007) Sentinel events in Australian public hospitals 2004-05. Australian Institute of Health & Welfare, Canberra, pp. 1-35.
- Australian Nursing & Midwifery Council (2006) National Competency Standards for the Registered Nurse. Australian Nursing & Midwifery Council, Canberra, ACT, pp. 8.
- Association of Operating Room Registered Nurses (2008) 2008 Perioperative Standards and Recommended Practices. Association of Operating Room Registered Nurses, Denver, CO, pp. 675.
- Association for Perioperative Practice (2007) Standards and Recommendations for Safe Perioperative Practice 2007. Association for Perioperative Practice, Yorkshire.
- Benner, P. (1984) *From novice to expert: Excellence and power in clinical nursing practice*, Addison-Wesley, Menlo-Park.
- Bull, R. and FitzGerald, M. (2006) Nursing in a technological environment: Nursing care in the operating room. *International Journal of Nursing Practice*, 12, 3-7.
- Carper, B. (1978) Fundamental patterns of knowing in nursing. *Advances in Nursing Science*, 1(1), 13-23.

- Chariella, M., Thoms, D. and McInnes, E. (2008) An overview of the competency movement in nursing and midwifery. *Collegian*, 15(2), 45-53.
- Coe, R. and Gould, D. (2007) Disagreement and aggression in the operating theatre. *Journal of Advanced Nursing*, 61(6), 609-618.
- Denzin, N. and Lincoln, Y. (1994) Introduction: Entering the field of qualitative research. In *Handbook of qualitative research* Sage, Thousand Oaks, CA.
- DeSantis, L. and Ugarriza, D. (2000) The concept of theme as used in qualitative nursing research. *Western Journal of Nursing Research*, 22(3), 351-372.
- Gillespie, B. and Richardson-Tench, M. (in press) Perioperative nursing. In *Perioperative nursing* (Eds, Hamlin, L., Davies, M. and Richardson-Tench, M.) Elsevier, Sydney.
- Gillespie, B., Wallis, M. and Chaboyer, W. (2006) Clinical competence in the perioperative environment: Implications for education. *ACORN*, 19(3), 19-26.
- Gillespie, B., Wallis, M. and Chaboyer, W. (2008) Operating room culture - implications for nurse retention. *Western Journal of Nursing Research*, 30(2), 259-277.
- Glaze, J. (1999) Part 5: Reflecting on interpersonal knowledge and professional knowledge. *British Journal of Theatre Nursing.*, 9(2), 64-69.
- Healey, A., Undre, S. and Vincent, C. (2006) Defining the technical skills of teamwork in surgery. *Quality and Safety in Health Care*, 15, 3.
- International Council of Nurses (1987) Specialisation in nursing: A discussion paper. Geneva, pp. 5.
- Klueger, R. (1994) *Focus groups: A practical guide for applied research.* , Sage, Thousand Oaks, CA.
- Krueger, R. (1997) *Focus groups*, Sage, Chichester.

- Lingard, L., Epsin, S., Rubin, B., Whyte, S., Colmenares, M., Baker, G., Doran, D., Grober, E., Orser, B., Bohnen, J. and Reznick, R. (2005) Getting teams to talk: development and pilot implementation of a checklist to promote interprofessional communication in the OR. *Quality and Safety in Health Care*, 14, 340-346.
- Moss, J. and Xiao, Y. (2004) Improving operating room coordination: Communication pattern assessment. *JONA*, 34(2), 93 -100.
- Moss, J., Xiao, Y. and Zubaidah, S. (2002) The operating room charge nurse: Coordinator and communicator. *Journal of American Medicine Information Association*, 9, S70-S74.
- Patton, M. (2002) *Qualitative research evaluation methods*, Sage, California.
- Prowse, M. and Lyne, P. (2000) Clinical effectiveness in the post-anaesthesia care unit: How nursing knowledge contributes to achieving intended patient outcomes. *Journal of Advanced Nursing*, 31(5), 1115-1124.
- Reason, J. (2005) Safety in the operating theatre - Part 2: Human error and organisational failure. *Quality and Safety in Health Care*, 14, 56-61.
- Riley, R. and Manias, E. (2006) Governance in operating room nursing: Nurses' knowledge of individual surgeons. *Social Science and Medicine*, 62, 1541-1551.
- Sandelowski, M. (1999) Troubling distinctions: A semiotics of the nursing / technology relationship. *Nursing Inquiry*, 6, 198-207.
- Sexton, B., Thomas, E. and Helmreich, R. (2000) Error, stress and teamwork in medicine and aviation: Cross sectional surveys. *British Medical Journal*, 320, 745-749.

- Sigurdsson, H. (2001) The meaning of being a perioperative nurse. *AORN Journal*, 74(2), 202-217.
- Silen-Lipponen, M., Tossavainen, K., Turunen, H. and Smith, A. (2005) Potential errors and their prevention in operating room teamwork as experienced by Finnish, British and American nurses. *International Journal of Nursing Practice*, 11, 21-32.
- Sim, J. (1998) Collecting and analysing qualitative data: Issues raised by the focus group. *Journal of Advanced Nursing*, 28(2), 345-352.
- Strauss, A. and Corbin, J. (1990) *Basics of qualitative research: Grounded theory procedures and techniques*, Sage, Newbury Park.
- Wilson, R., Runciman, W., Gibbard, R., Harrison, B., Newby, L. and Hamilton, J. (1995) The quality in Australian health care study. *The Medical Journal of Australia*, 163, 458-471.

TABLES

Theme	Category
Coalescence of theoretical, practical, situational and aesthetic knowledge within a technocratic environment.	<ul style="list-style-type: none">• Technical and procedural knowledge• Knowledge of protocols and standards• Situational knowledge• Aesthetic knowledge
The importance of highly developed communication skills among teams of divergent personalities and situations.	<ul style="list-style-type: none">• Building communication skills in teams• Team members are conduits of information• The enabling influence of collegial support
Managing and coordinating the flow of the list.	<ul style="list-style-type: none">• Coordinating and negotiating competing priorities• Leadership attributes• Adapting and being flexible• Using the big picture perspective

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Author contributions

All authors contributed to data analysis, the writing of this paper and critical revisions. Brigid Gillespie drafted and prepared the manuscript.

Study Design: BG; WC; MW

Data Collection: BG; MW

Data Analysis: BG; AC; WC; MW; HW

Critical Revision of Manuscript: BG; WC; MW; HW; AC